In the claims:

- 1. (Currently amended) A method of causing light emission from carbon nanotubes, comprising exposing carbon nanotubes <u>having one or more gases absorbed or adsorbed thereto</u> to microwave irradiation <u>in an inert gas chamber or a vacuum chamber</u>, wherein the microwave <u>irradiation causes light emission and desorption of the gases from the carbon nanotubes</u>.
- 2. (Currently amended) A method of causing mechanical motion of carbon nanotubes comprising exposing carbon nanotubes <u>having one or more gases absorbed or adsorbed thereto</u> to microwave irradiation in an inert gas chamber or a vacuum chamber, wherein the microwave irradiation causes mechanical motion of the carbon nanotubes and desorption of the gases from the carbon nanotubes.
- 3. (Currently amended) A method of causing carbon nanotube reconstruction, comprising exposing carbon nanotubes <u>having one or more gases absorbed or adsorbed thereto</u> to microwave irradiation in an inert gas chamber or a vacuum chamber, wherein the microwave <u>irradiation causes reconstruction of the carbon nanotubes and desorption of the gases from the carbon nanotubes</u>.
- 4. (Currently amended) A method of outgassing absorbed or adsorbed species gases from carbon nanotubes, comprising exposing carbon nanotubes <u>having one or more gases</u> <u>absorbed or adsorbed thereto</u> to microwave irradiation in an inert gas chamber or a vacuum <u>chamber</u>, wherein the microwave irradiation causes outgassing of the gases from the carbon nanotubes.
 - 5. Cancelled.
- 6. (Original) The method of Claim 4 wherein the carbon nanotubes comprise single-walled carbon nanotubes.
- 7. (Original) The method of Claim 4 wherein the carbon nanotubes comprise multiwalled carbon nanotubes.

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- 8. Cancelled.
- 9. (Currently amended) The method of Claim § 1, wherein the carbon nanotubes are subjected to microwave irradiation while in a vacuum chamber;

wherein the vacuum is between approximately 10^{-4} torr and 10^{-8} torr; and the microwave frequency is between 0.1 GHz and 100 GHz.

10. (Currently amended) The method of Claim & 1, wherein the carbon nanotubes are subjected to microwave irradiation while in a vacuum chamber;

wherein the vacuum is between approximately 10⁻⁴ torr and 10⁻⁸ torr; the microwave frequency is about 2.45 GHz; and the microwave power is between 0.1 Watt and 1,500 Watts.

11. (Original) The method of Claim 4, wherein the microwave field incident upon the carbon nanotubes is about 1.01×10^{-5} eV.

Claims 12 - 38. (Cancelled).

- 39. (New) The method of Claim 1 wherein the carbon nanotubes comprise single-walled carbon nanotubes.
- 40. (New) The method of Claim 2 wherein the carbon nanotubes comprise single-walled carbon nanotubes.
- 41. (New) The method of Claim 3 wherein the carbon nanotubes comprise single-walled carbon nanotubes.
- 42. (New) The method of Claim 1 wherein the carbon nanotubes comprise multi-walled carbon nanotubes.
- 43. (New) The method of Claim 2 wherein the carbon nanotubes comprise multi-walled carbon nanotubes.

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- 44. (New) The method of Claim 3 wherein the carbon nanotubes comprise multi-walled carbon nanotubes.
- 45. (New) The method of Claim 2, wherein the carbon nanotubes are subjected to microwave irradiation while in a vacuum chamber;

wherein the vacuum is between approximately 10⁻⁴ torr and 10⁻⁸ torr; and the microwave frequency is between 0.1 GHz and 100 GHz.

46. (New) The method of Claim 3, wherein the carbon nanotubes are subjected to microwave irradiation while in a vacuum chamber;

wherein the vacuum is between approximately 10⁻⁴ torr and 10⁻⁸ torr; and the microwave frequency is between 0.1 GHz and 100 GHz.

47. (New) The method of Claim 4, wherein the carbon nanotubes are subjected to microwave irradiation while in a vacuum chamber;

wherein the vacuum is between approximately 10⁻⁴ torr and 10⁻⁸ torr; and the microwave frequency is between 0.1 GHz and 100 GHz.

48. (New) The method of Claim 2, wherein the carbon nanotubes are subjected to microwave irradiation while in a vacuum chamber;

wherein the vacuum is between approximately 10⁻⁴ torr and 10⁻⁸ torr; the microwave frequency is about 2.45 GHz; and the microwave power is between 0.1 Watt and 1,500 Watts.

49. (New) The method of Claim 3, wherein the carbon nanotubes are subjected to microwave irradiation while in a vacuum chamber;

wherein the vacuum is between approximately 10⁻⁴ torr and 10⁻⁸ torr; the microwave frequency is about 2.45 GHz; and the microwave power is between 0.1 Watt and 1,500 Watts.

50. (New) The method of Claim 4, wherein the carbon nanotubes are subjected to microwave irradiation while in a vacuum chamber;

wherein the vacuum is between approximately 10⁻⁴ torr and 10⁻⁸ torr;

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the microwave frequency is about 2.45 GHz; and the microwave power is between 0.1 Watt and 1,500 Watts.

- 51. (New) The method of Claim 1, wherein the microwave field incident upon the carbon nanotubes is about 1.01×10^{-5} eV.
- 52. (New) The method of Claim 2, wherein the microwave field incident upon the carbon nanotubes is about 1.01×10^{-5} eV.
- 53. (New) The method of Claim 4, wherein the microwave field incident upon the carbon nanotubes is about 1.01×10^{-5} eV.

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